Alan Stout/AA/USEPA/US
EPA-OAR,OTAQ,ASD
Sent by: Alan Stout

Received Date:
10/16/2008 04:48 PM
Transmission Date:
10/16/2008 04:48:40 PM

To rgault@emamail.org, WGuerry@KelleyDrye.com
cc
bcc Alan Stout/AA/USEPA/US
Subject Draft technical amendments

Roger and Bill,
We have gathered input for a variety of technical amendments as shown in the attached memo. The goal is to include these changes in the soon-to-be-finalized rule adopting OBD requirements for heavy-duty highway engines (if the shoe fits...).

These repairs come from both the Small SI rule (Oct. 2008) and the Loco-marine rule (June 2008). Most of these are very minor corrections. A couple more significant things have been raised by manufacturers (and the Navy). The changes to the standard-setting parts apply specifically for individual engine categories, of course, while the changes to part 1068 (and 1060 to some degree) are of more general interest. Feel free to distribute this as you feel is appropriate to make sure we get things right without another iteration. We are aiming to keep the OBD rule on a fast track, so this isn't necessarily an invitation to look for more things. If all goes well, we'll get a thumbs-up from both of you and be done (for a while).

Let me know if you see anything to note.

Alan

 - Bond amendments -memo.doc

Alan Stout/AA/USEPA/US
EPA-OAR,OTAQ,ASD
Sent by: Alan Stout

Received Date:
10/16/2008 04:58 PM
Transmission Date:
10/16/2008 04:58:01 PM

To gcross27103@earthlink.net, KHay@ImpcoTechnologies.com
cc
bcc Alan Stout/AA/USEPA/US
Subject Technical amendments

Gary and Karen,
We have gathered input for a variety of technical amendments as shown in the attached memo. The goal is to include these changes in the soon-to-be-finalized rule adopting OBD requirements for heavy-duty highway engines.

These repairs come from both the Small SI rule (Oct. 2008) and the Loco-marine rule (June 2008). A couple of these things will be of interest for you, though most of the changes are minor corrections, and many of the changes are for other engine categories besides Large SI. Feel free to distribute this as you feel is appropriate to make sure we get things right without another iteration. We are aiming to keep the OBD rule on a fast track, so this isn't necessarily an invitation to look for more things. If you find something that needs attention, I'll do my best to attend to it.

I also realized/remembered that we adopted a new paragraph §1048.601(b) to help address the questions you have raised relative to the replacement engine exemption for partially complete engines. It would be good for you to look that over before we talk again about the path forward on that issue.

Alan

 - Bond amendments -memo.doc

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL VEHICLE AND FUEL EMISSIONS LABORATORY
2000 TRAVERWOOD DRIVE
ANN ARBOR, MI 48105-2498

OFFICE OF
AIR AND RADIATION

DRAFT – October 16, 2008

MEMORANDUM

SUBJECT: Technical Amendments to EPA Regulations

FROM: Alan Stout
Office of Transportation and Air Quality

TO: Docket EPA-HQ-OAR-2005-0047

The following pages include draft regulatory text describing various technical amendments we are including in this final rule. Most of these changes involve minor adjustments or corrections to the regulations we adopted on October 8, 2008 (73 FR 59034).

These modifications are briefly summarized as follows:

§86.1863-07: Adding a reference to part 1065 in addition to the test procedures in part 86, subpart N.

§89.1: Revising the definition of "hobby engine" to align with changes adopted in 40 CFR part 1039.

§90.611: Clarifying that the new provisions for the personal-use exemption in 40 CFR 1054.630 apply without delay. This clarification is necessary because exempted engines are not affected by the dates associated with certifying Phase 2 or Phase 3 engines.

§1033.150: Correcting a typographical error in Table 1.

§1033.515: Clarifying the steps associated with setting minimum dilution ratios for testing locomotives.

§1033.520: Correcting publishing errors in Tables 1 and 2 and moving them to a new paragraph.

§1033.640: Correcting a reference.

§1042.101: Clarifying the appropriate emission standards for recreational marine diesel engines. We mistakenly removed recreational engines from the footnote in Table 1 to §1042.101.

§1042.635: Adding a provision allowing federal defense agencies to request an exemption for remanufactured engines that become subject to standards under the remanufacturing program. This approach is consistent with the existing approach for freshly manufactured engines. We are also correcting this section by stating that engines used in combat applications are exempt without request, without limiting the exemption to manufacturers.

§1048.15: Revising the text to clarify that both fuel-tank manufacturers and fuel-line

manufacturers to certify to evaporative emission standards under 40 CFR part 1060 to show that they meet applicable requirements for Large SI engines and equipment.

§1048.801: Revising the definition of "constant-speed operation" to clarify that engines with adjustable governors qualify as constant-speed engines, consistent with the change described for §1065.1001.

§1054.690. Correcting a reference.

§1060.102. Clarifying that fuel lines meeting the most stringent standards (for Low-Emission Fuel Lines) require no further demonstration.

§1060.103. Revising the regulatory text to exclude grommets for hose and tubing excluded from the definition of "fuel line." For example, grommets used with fuel return lines on handheld equipment are not considered to be part of the fuel tank.

§1060.501: Adding text to clarify that the readability specifications in the examples are based on digital equipment. For example, calculated readability may be 0.2, which would indicate that a digital readout to the nearest tenth of a gram is required.

§1060.501 Revising the third example to correct a calculation error and adjust the measurement parameters to better reflect a representative test configuration.

§§1060.510 and 1060.515: Correcting references.

§1065.1001: Revising the definition of "constant-speed operation" to clarify that engines with adjustable governors qualify as constant-speed engines. This may occur, for example, with a saw that is governed to operate at a given nominal speed, but the operator may adjust the speed set point as needed to maintain the desired cutting speed at the blade tip.

§1068.225: Revising the text to clarify that engines used in combat applications are exempt without request, without limiting the exemption to manufacturers.

§1068.325: Clarifying that the provisions of §1068.262 apply equally to "new" partially complete engines that are imported, whether or not they were placed into service previously.

PART 86-CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

1. The authority citation for part 86 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart S—[Amended]

2. Section 86.1863-07 is amended by revising paragraph (c) to read as follows:

§ 86.1863-07 Optional chassis certification for diesel vehicles.
* * * * *
(c) Diesel vehicles optionally certified under this section may be tested using the test fuels, sampling systems, or analytical systems specified for diesel engines in Subpart N of this part or in 40 CFR part 1065.
* * * * *

PART 89-CONTROL OF EMISSIONS FROM NEW AND IN-USE NONROAD COMPRESSION-IGNITION ENGINES

3. The authority citation for part 89 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart A—[Amended]

4. Section 89.1 is amended by revising paragraph (b)(5) to read as follows:
§89.1 Applicability.
* * * * *
(b) * * *
(5) Hobby engines. This part does not apply for engines ~~with a per-cylinder displacement of less than 50 cubic centimeters.~~ installed in reduced-scale models of vehicles that are not capable of transporting a person.
* * * * *

PART 90- CONTROL OF EMISSIONS FROM NONROAD SPARK-IGNITION ENGINES AT OR BELOW 19 KILOWATTS

5. The authority citation for part 90 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart G—[Amended]

6. Section 90.611 is revised to read as follows:

§ 90.611 Importation for purposes other than resale.
The provisions of 40 CFR 1054.630 apply for importation of nonconforming engines for personal use.

PART 1033- CONTROL OF EMISSIONS FROM LOCOMOTIVES

7. The authority citation for part 1033 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart B—[Amended]

8. Section 1033.150 is amended by revising Table 1 in paragraph (f) to read as follows.
§1033.150 Interim provisions.
* * * * *
(f) * * *

Table 1 to §1033.150—
In-use Adjustments for Tier 4 Locomotives

Fraction of useful life already used	In-use adjustments (g/bhp-hr)	
	For model year 2017 and earlier Tier 4 NOx standards	For model year 2017 and earlier Tier 4 PM standards
0 < MW-hrs ≤ 50% of UL	0.7	0.01
50 < MW-hrs ≤ 75% of UL	1.0	0.01
MW-hrs > 75% of UL	1.3	0.01

* * * * *

Subpart F—[Amended]

9. Section 1033.515 is amended by revising paragraph (c)(5) to read as follows.
§1033.515 Discrete-mode steady-state emission tests of locomotives and locomotive engines.
* * * * *
(c) * * *
(5) Begin proportional sampling of PM emissions at the beginning of each sampling period and terminate sampling within ± 5 seconds of the specified time in each test mode. If the PM sample is not sufficiently large, take one of the following actions consistent with good engineering judgment:
(i) Extend the sampling period up to a maximum of 15 minutes.
(ii) Group the modes in the same manner as the phases of the ramped modal cycle and use three different dilution settings for the groups. Use one setting for both idle modes, one for dynamic brake through notch 5, and one for notches 6 through 8. For each group, ensure that the mode with the highest exhaust flow (typically normal idle, notch 5, and notch 8) meets the criteria for minimum dilution ratio in 40 CFR part 1065.

* * * * *

10. Section 1033.520 is amended by revising Tables 1 and 2 and moving the revised tables into a new paragraph (g) to read as follows:

§1033.520 Alternative ramped modal cycles.

* * * * *

(g) The following tables define applicable ramped modal cycles for line-haul and switch locomotives:

Table 1 to §1033.520: Line-haul locomotive ramped modal cycle

RMC Test Phase	Weighting Factor	RMC Mode	Time in mode (seconds)	Notch Setting
Pre-test idle	NA	NA	600 to 900	Lowest idle setting[1]
Phase 1 (Idle test)	0.380	A	600	Low Idle[2]
		B	600	Normal Idle
Phase Transition				
Phase 2	0.389	C	1000	Dynamic Brake[3]
		1	520	Notch 1
		2	520	Notch 2
		3	416	Notch 3
		4	352	Notch 4
		5	304	Notch 5
Phase Transition				
Phase 3	0.231	6	144	Notch 6
		7	111	Notch 7
		8	600	Notch 8

[1] See paragraph (d) of this section for alternate pre-test provisions.

[2] Operate at normal idle for modes A and B if not equipped with multiple idle settings.

[3] Operate at normal idle if not equipped with a dynamic brake.

Table 2 to §1033.520: Switch locomotive ramped modal cycle

RMC Test Phase	Weighting Factor	RMC Mode	Time in mode (seconds)	Notch Setting
Pre-test idle	NA	NA	600 to 900	Lowest idle setting[1]
Phase 1 (Idle test)	0.598	A	600	Low Idle[2]
		B	600	Normal Idle
Phase Transition				
Phase 2	0.377	1	868	Notch 1
		2	861	Notch 2
		3	406	Notch 3
		4	252	Notch 4
		5	252	Notch 5
Phase Transition				
Phase 3	0.025	6	1080	Notch 6
		7	144	Notch 7
		8	576	Notch 8

[1] See paragraph (d) of this section for alternate pre-test provisions.
[2] Operate at normal idle for modes A and B if not equipped with multiple idle settings.

Subpart G—[Amended]

11. Section 1033.640 is amended by revising paragraph (a)(2) to read as follows.

§1033.640 Provisions for repowered and refurbished locomotives.

(a) * * *

(2) Refurbished locomotives are locomotives that contain more unused parts than previously used parts. As described in this section, a locomotive containing more unused parts than previously used parts may deemed to be either remanufactured or freshly manufactured, depending on the total amount of unused parts on the locomotive. Note that §1033.901 defines refurbishment of a pre-1973 locomotive to be an upgrade of the locomotive.

* * * * *

PART 1042- CONTROL OF EMISSIONS FROM NEW AND IN-USE MARINE COMPRESSION-IGNITION ENGINES AND VESSELS

12. The authority citation for part 1042 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

Subpart B—[Amended]

13. Section 1042.101 is amended by revising Table 1 in paragraph (a)(3) to read as follows:

§1042.101 Exhaust emission standards.

(a) * * *

(3) * * *

[Note to editor: please photo the following table.]

Table 1 to §1042.101— Tier 3 Standards for Category 1 Engines Below 3700 kW [a]

Power Density and Application	Displacement (L/cyl)	Maximum Engine Power	Model Year	PM (g/kW-hr)	NOx+HC (g/kW-hr) [b]
all	disp.< 0.9	kW <19	2009+	0.40	7.5
		19 ≤ kW < 75	2009-2013	0.30	7.5
			2014+	0.30	4.7
Commercial engines with kW/L ≤ 35[b]	disp.< 0.9	kW ≥ 75	2012+	0.14	5.4
	0.9 ≤ disp. < 1.2	all	2013+	0.12	5.4
	1.2 ≤ disp. < 2.5	kW < 600	2014-2017	0.11	5.6
			2018+	0.10	5.6
		kW ≥ 600	2014+	0.11	5.6
	2.5 ≤ disp. < 3.5	kW < 600	2013-2017	0.11	5.6
			2018+	0.10	5.6
		kW ≥ 600	2013+	0.11	5.6
	3.5 ≤ disp.< 7.0	kW < 600	2012-2017	0.11	5.8
			2018+	0.10	5.8
		kW ≥ 600	2012+	0.11	5.8
Commercial engines with kW/L > 35 and all recreational engines[b]	disp. < 0.9	kW ≥ 75	2012+	0.15	5.8
	0.9 ≤ disp. < 1.2	all	2013+	0.14	5.8
	1.2 ≤ disp. < 2.5		2014+	0.12	5.8
	2.5 ≤ disp. < 3.5		2013+	0.12	5.8
	3.5 ≤ disp. < 7.0		2012+	0.11	5.8

[a] No Tier 3 standards apply for commercial Category 1 engines at or above 3700 kW. See §1042.1(c) and paragraph (a)(6) of this section for the standards that apply for these engines.

[b] The applicable NOx+HC standards specified for Tier 2 engines in Appendix I of this part continue to apply instead of the values noted in the table for commercial engines at or above 2000 kW. FELs for these engines may not be higher than the Tier 1 NOx standard specified in Appendix I of this part.

* * * * *

Subpart G—[Amended]

14. Section 1042.635 is amended by revising paragraphs (a) and (b) and removing and reserving paragraph (c) to read as follows:

§1042.635 National security exemption.

* * * * *

(a) An engine is exempt without a request if it will be used or owned by an agency of the federal government responsible for national defense, where the vessel has armor, permanently attached weaponry, specialized electronic warfare systems, unique stealth performance requirements, and/or unique combat maneuverability requirements.

(b) Manufacturers may request a national security exemption for engines not meeting the conditions of paragraph (a) of this section, as long as the request is endorsed by an agency of the federal government responsible for national defense. Agencies of the federal government responsible for national defense may request exemptions for remanufactured engines. In your request, explain why you need the exemption.

(c) [Reserved].

* * * * *

PART 1048-CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES

15. The authority citation for part 1048 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

Subpart A—[Amended]

16. Section 1048.15 is amended by revising paragraph (a) to read as follows:

§1048.15 Do any other regulation parts apply to me?

(a) Part 1060 of this chapter describes standards and procedures for controlling evaporative emissions from engines fueled by gasoline or other volatile liquid fuels and the associated fuel systems. These requirements apply to engine manufacturers as specified in this part 1048. Part 1060 applies optionally for equipment manufacturers and ~~fuel-tank~~ fuel-system component manufacturers for certifying their products.

* * * * *

Subpart I—[Amended]

17. Section 1048.801 is amended by revising the definition for "Constant-speed engine" to read as follows:

§1048.801 What definitions apply to this part?

* * * * *

Constant-speed engine means an engine that is certified only for constant-speed operation. This may include engines that allow the operator to adjust the set point for fixing the

appropriate governed speed. See subparts B and C of this part for specific provisions related to certifying engines only for constant-speed operation. Engines whose constant-speed governor function is removed or disabled are no longer constant-speed engines.
* * * * *

Part 1054— Control of Emissions from New, Small Nonroad Spark-ignition Engines and Equipment

18. The authority citation for part 1060 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart G—[Amended]

19. Section 1054.690 is amended by revising paragraph (a) to read as follows:
§1054.690 What bond requirements apply for certified engines?
(a) Before introducing certified engines into U.S. commerce, you must post a bond to cover any potential compliance or enforcement actions under the Clean Air Act unless you demonstrate to us in your application for certification that you are able to meet any potential compliance- or enforcement-related obligations, as described in this section. See paragraph (j) of this section for the requirements related to importing engines that have been certified by someone else. Note that you might also post bond under this section to meet your obligations under §1054.120.
* * * * *

PART 1060—CONTROL OF EVAPORATIVE EMISSIONS FROM NEW AND IN-USE NONROAD AND STATIONARY EQUIPMENT

20. The authority citation for part 1060 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart B—[Amended]

21. Section 1060.102 is amended by revising paragraph (d)(1) to read as follows:
§1060.102 What permeation emission control requirements apply for fuel lines?
* * * * *
(d) * * *
(1) EPA Low-Emission Fuel Lines must have permeation emissions at or below 10 g/m^2/day when measured according to the test procedure described in §1060.510. Fuel lines that comply with this emission standard are deemed to comply with all the emission standards specified in this section.
* * * * *

22. Section 1060.103 is amended by revising paragraph (d) to read as follows:
§1060.103 What permeation emission control requirements apply for fuel tanks?
* * * * *
(d) For purposes of this part, fuel tanks do not include fuel lines that are subject to §1060.102, petcocks designed for draining fuel, grommets used with fuel lines, or grommets used with other

hose or tubing excluded from the definition of "fuel line." Fuel tanks include other fittings (such as fuel caps, gaskets, and O-rings) that are directly mounted to the fuel tank.
* * * * *

Subpart F—[Amended]

23. Section 1048.501 is amended by revising paragraph (e) to read as follows:
§1060.501 General testing provisions.
* * * * *
(e) Accuracy and precision of mass balances must be sufficient to ensure accuracy and precision of two percent or better for emission measurements for products at the maximum level allowed by the standard. The readability of the display may not be coarser than half of the required accuracy and precision. Examples are shown in the following table for a digital readout:

	Example #1	Example #2	Example #3
Applicable standard	1.5 g/m^2/day	1.5 g/m^2/day	15 g/m^2/day
Internal surface area	1.15 m^2	0.47 m^2	0.015 m^2
Length of test	14.0 days	14.0 days	14.3 days
Maximum allowable mass change	24.15 g	9.87 g	3.218 g
Required accuracy and precision	±0.483 g or better	±0.197 g or better	±0.0644 g or better
Required readability	0.1 g or better	0.1 g or better	0.01 g or better

24. Section 1060.510 is revised to read as follows:
§1060.510 How do I test EPA Low-Emission Fuel Lines for permeation emissions?
For EPA Low-Emission Fuel Lines, measure emissions according to SAE J2260, which is incorporated by reference in ~~§1054.810~~ §1060.810.

25. Section 1060.515 is amended by revising paragraphs (a)(1) and (c) to read as follows:
§1060.515 How do I test EPA Nonroad Fuel Lines and EPA Cold-Weather Fuel Lines for permeation emissions?
* * * * *
(a) * * *
(1) For EPA Nonroad Fuel Lines, use Fuel CE10, which is Fuel C as specified in ASTM D471 (incorporated by reference in ~~§1054.810~~ §1060.810) blended with ethanol such that the blended fuel has 10.0 ± 1.0 percent ethanol by volume.
* * * * *
(c) Measure fuel line permeation emissions using the equipment and procedures for weight-loss testing specified in SAE J30 or SAE J1527 (incorporated by reference in ~~§1054.810~~ §1060.810). Start the measurement procedure within 8 hours after draining and refilling the fuel line.

Perform the emission test over a sampling period of 14 days.

PART 1065-ENGINE-TESTING PROCEDURES

26. The authority citation for part 1065 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart K- [Amended]

27. Section 1065.1001 is amended by revising the definition for "Constant-speed operation" to read as follows:

§1065.1001 Definitions.

* * * * *

Constant-speed operation means engine operation with a governor that automatically controls the operator demand to maintain engine speed, even under changing load. Governors do not always maintain speed exactly constant. Typically speed can decrease (0.1 to 10) % below the speed at zero load, such that the minimum speed occurs near the engine's point of maximum power. (Note: An engine with an adjustable governor setting may be considered to operate at constant speed, subject to our approval. For such engines, the governor setting is considered an adjustable parameter.)

* * * * *

PART 1068—GENERAL COMPLIANCE PROVISIONS FOR NONROAD PROGRAMS

28. The authority citation for part 1068 continues to read as follows:
Authority: 42 U.S.C. 7401-7671q.

Subpart C—[Amended]

29. Section 1068.225 is amended by revising paragraphs (a) and (b) and removing and reserving paragraph (c) to read as follows:

§1068.225 What are the provisions for exempting engines/equipment for national security?

(a) An engine/equipment is exempt without a request if it will be used or owned by an agency of the federal government responsible for national defense, where the equipment has armor, permanently attached weaponry, or other substantial features typical of military combat.
(b) Manufacturers may request a national security exemption for engines/equipment not meeting the conditions of paragraph (b) of this section as long as the request is endorsed by an agency of the federal government responsible for national defense. In your request, explain why you need the exemption.
(c) [Reserved].

* * * * *

Subpart D—[Amended]

30. Section 1068.325 is amended as follows:

a. By revising paragraph (g)(1).
b. By redesignating paragraph (i) as paragraph (j).
c. By reserving paragraph (i).

§1068.325 What are the temporary exemptions for imported engines/equipment?

* * * * *

(g) * * *

(1) You may import an engine if another company already has a certificate of conformity and will be modifying the engine to be in its final, certified configuration under the provisions of §1068.262. If you are importing a used engine that becomes new as a result of importation, you must meet all the requirements that apply to original engine manufacturers under §1068.262.

* * * * *

(i) [Reserved].